Thermoplastic Masks Evaluation

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Introduction

- Thermoplastic masks are used to immobilize patients' head & neck region during radiotherapy.
- NCCS, Division of Radiation Oncology, is currently using masks from Orfit Industries’ but there are alternative options available for thermoplastic masks in the market to explore.

Objectives

- To score & evaluate the current masks (Orfit Industries’) against masks from other distributor (Klarity Medical) available in the market for radiotherapy.

Methodology

- Current masks from Orfit Industries’ were compared against 3 different masks from Klarity Medical (Type A, B & C) based on the following factors:

  - Water Bath & Convection Oven Compatibility
  - Moulding Duration
  - Compatibility with Current Shell Bases
  - Memory
  - Cooling Down Duration
  - Material Shrinkage
  - Ability To Stretch

- The results were compiled and a weighted polar plot was generated to visually represent the scores of individual thermoplastic masks.

Results

- All the masks were compatible with water bath/convection oven during fabrication and fits the existing baseplates.
- Overall scores for all thermoplastic masks are as follows:
  1. Orfit Industries’ – 83%
  2. Klarity Medical Type A – 65%
  3. Klarity Medical Type B – 63%
  4. Klarity Medical Type C – 63%

- Klarity Medical Type A thermoplastic mask scored the highest for moulding duration, with a duration of 2 minutes.

Conclusion

- Orfit Industries’ thermoplastic masks was characterised with longer cooling duration and higher ability to stretch which facilitates better material handling during clinical fabrication.
- Having the highest overall score of 83% against the 3 thermoplastic masks from Klarity Medical, the department chose to continue using thermoplastic masks from Orfit Industries’.